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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,358	10/26/2001	John F. Filhaber	SP01-300	2304

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CORNING INCORPORATED
SP-TI-3-1
CORNING, NY 14831

EXAMINER	
CONNELLY CUSHWA, MICHELLE R	
ART UNIT	**PAPER NUMBER**
2874	

DATE MAILED: 02/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/035,358	FILHABER ET AL.	
	Examiner	Art Unit	
	Michelle R. Connelly-Cushwa	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,10-12,17-22,29-34 and 43-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,10-12,17-22,29-34 and 43-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8,10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's Amendment filed October 26, 2001 has been fully considered and entered.

Information Disclosure Statement

The prior art documents submitted by applicant in the Information Disclosure Statements filed on August 4, 2003 and December 19, 2003 have all been considered and made of record (note the attached copies of form PTO-1449).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 21, 22 and 29-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 21; the claim recites the limitation "the article" in line 6 of the claim. There is insufficient antecedent basis for this limitation in the claim. Examiner suggests changing "the article" to –lens array— in line 6 of claim 21 to overcome this rejection.

Regarding claims 22 and 29-32; the claims inherently contain the deficiencies of any base or intervening claims from which they depend.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4, 10-12, 17-22, 29-34 and 43-46 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4, 10-12, 17-22, 29-34 and 43-46 of copending Application No. 10/255,777. Although the conflicting claims are not identical, they are not patentably distinct from each other because "a temperature below about 200°C" as defined in claims 1, 21 and 33 of U.S. Application No. 10/255,777 is a temperature "below the softening temperature" of the optical waveguides and/or optical articles as defined in claims 1, 21 and 33 of the present application. Claims 1-4, 10-12, 17-22, 29-34 and 43-46 are otherwise identical in both applications.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 33, 34, 43 and 44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9, 13-18, 22-28 and 33-36 of copending Application No. 10/232,193.

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-9, 13-18, 22-28 and 33-36 disclose or suggest all of the limitations of claims 33, 34, 43 and 44.

Regarding claim 33; the claims of U.S. Application No. 10/232,193 disclose a method of manufacturing an optical component comprising:

- providing at least two optical articles (first and second glass articles or first and second optical fiber preforms) each having a bonding surface (see claims 1, 2, 14, 22 and 33-36 of 10/232,193);
- contacting the bonding surfaces of the optical articles with an acid (see claims 5, 16 and 25 of 10/232,193);
- contacting the bonding surfaces of the optical articles with a solution having a pH greater than 8 (see claims 7, 17 and 27 of 10/232,193), whereby termination groups selected from the group consisting of –OH, ≡Si-OH, =Si-$(OH)_2$, -$Si(OH)_3$ and –O-Si-$(OH)_3$, and combinations thereof, are formed on the surfaces (see claims 6, 23 and 26 of 10/232,193); and
- bonding the surface of the respective optical articles to each other without an adhesive and at a temperature below the softening temperature of the optical article (see claims 1, 14, 22 and 33 of 10/232,193).

Regarding claim 34; the optical article is selected from a group including a polarizer (polarizing glass, see claim 13 of 10/232,193).

Regarding claims 43 and 44; the solution having a pH greater than 8 includes ammonium hydroxide (see claims 7-9, 17, 18, 27 and 28 of 10/232,193).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 33, 43 and 44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 22-24 and 32-37 of copending Application No. 10/118,780. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 22-24 and 32-37 of U.S. Application No. 10/118,780 disclose or suggest all of the limitations of claims 33, 43 and 44 of the present application.

Regarding claim 33; the claims of U.S. Application No. 10/118,780 disclose a method of manufacturing an optical component comprising:

- providing at least two optical articles (glass articles) each inherently having a bonding surface (see claims 22 and 24 of 10/118,780);
- contacting the bonding surface of at least one of the optical articles with an acid (see claim 37 of 10/118,780);
- contacting the bonding surfaces of at least one of the optical articles with a solution having a pH greater than 8 (see claim 32 of

10/118,780), whereby termination groups selected from the group consisting of –OH, ≡Si-OH, =Si-$(OH)_2$, -$Si(OH)_3$ and –O-Si-$(OH)_3$, and combinations thereof, are formed on at least one of the surfaces (see claim 33 of 10/118,780); and

- bonding the surface of the respective optical articles to each other without an adhesive and at a temperature below the softening temperature of the optical article (see claim 23 of 10/118,780).

The claims of 10/118,780 do not specifically state that both bonding surfaces are contacted with acid, contacted with the solution having a pH greater than 8, and/or have termination groups formed thereon. However, the claims do state that "at least one" of the bonding surfaces of the optical articles are contacted with acid, contacted with the solution having a pH greater than 8, and have termination groups formed thereon. The term "at least one" suggests that more than one (i.e. both) bonding surfaces may be contacted with acid, contacted with the solution having a pH greater than 8, and/or have termination groups formed thereon. Thus, one of ordinary skill in the art would have found it obvious to have both bonding surfaces corresponding to the respective optical articles in the invention defined in the claims of 10/118,780 be contacted with acid, contacted with the solution having a pH greater than 8 and/or have termination groups formed thereon.

Regarding claims 43 and 44; the solution having a pH greater than 8 is ammonium hydroxide (see claims 32-35 of 10/118,780).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-4, 10, 12, 17-19, 21, 22, 29, 31-34 and 43-45 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 9-10, 13-16 and 18 of copending Application No. 10/035,564. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-5, 9-10, 13-16 and 18 of copending Application No. 10/035,564 disclose or suggest all of the limitations of claims 1-4, 10, 12, 17-19, 21, 22, 29, 31-34 and 43-45 of the present application.

Regarding claims 1-4, 10, 12, 21, 22, 33, 34; the claims of U.S. Application No. 10/035,564 disclose a method of manufacturing an optical component comprising:

- providing at least two optical articles each having a bonding surface (see claims 1 and 16 of 10/035,564), the optical articles being selected from a waveguide, a microlens array, an optical fiber array, a photonic component, a lens, a ferrule, and an optical fiber waveguide (see claim 15 of 10/035,564);
- contacting the bonding surfaces of the optical articles with an acid (nitric acid, see claims 4 and 16 of 10/035,564);
- contacting the bonding surfaces of the optical articles with a solution having a pH greater than 8 (see claims 3, 4, 10 and 16 of 10/035,564), whereby termination groups selected from the group

consisting of –OH, ≡Si-OH, =Si-$(OH)_2$, -$Si(OH)_3$ and –O-Si-$(OH)_3$, and combinations thereof, are formed on the surfaces (see claim 1 of 10/035,564); and

- bonding the surface of the respective optical articles to each other without an adhesive and at a temperature below the softening temperature of the optical article (300°C is below the softening temperature of the optical waveguides, see claims 2 and 16 of 10/035,564).

One of ordinary skill in the art would have found it obvious to bond any two optical articles selected from a waveguide, a microlens array, an optical fiber array, a photonic component, a lens, a ferrule and an optical fiber waveguide in view of claim 15 of 10/035,564 with the bonding methods disclosed in the claims of 10/035,564, including first and second optical waveguide fibers and/or first and second ferrules.

Regarding claims 17, 18, 43 and 44; the solution having a pH greater than 8 includes ammonium hydroxide (see claims 10 and 16 of 10/035,564).

Regarding claims 19, 29 and 45; the method further includes the step of eliminating (removing) adsorbed water molecules at the interface between the surface of the optical articles (see claim 14 of 10/035,564).

Regarding claim 31; the method further includes the step of applying pressure to the bonding surfaces during the step of placing the surfaces in contact (see claims 13, 14 and 18 of 10/035,564).

Regarding claim 32; the pressure is applied with the assistance of a vacuum (see claim 14 of 10/035,564).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-4, 10, 12, 17-19, 21, 22, 29, 31-34 and 43-45 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 9-18 and 23 of copending Application No. 10/255,926. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-5, 9-18 and 23 of Application No. 10/255,926 disclose or suggest all of the limitations of claims 1-4, 10, 12, 17-19, 21, 22, 29, 31-34 and 43-45 of the present application.

Regarding claims 1-4, 10, 12, 21, 22, 33, 34; the claims of U.S. Application No. 10/255,926 disclose a method of manufacturing an optical component comprising:

- providing at least two optical articles each having a bonding surface (see claims 1 and 16 of 10/255,926), the optical articles being selected from a waveguide, a microlens array, an optical fiber array, a photonic component, a lens, a ferrule, and an optical fiber waveguide (see claim 15 of 10/255,926);
- contacting the bonding surfaces of the optical articles with an acid (nitric acid, see claims 4, 9 and 16 of 10/255,926);

- contacting the bonding surfaces of the optical articles with a solution having a pH greater than 8 (see claims 3, 10 and 16 of 10/255,926), whereby termination groups selected from the group consisting of –OH, ≡Si-OH, =Si-$(OH)_2$, -$Si(OH)_3$ and –O-Si-$(OH)_3$, and combinations thereof, are formed on the surfaces (see claims 1, 16 and 23 of 10/255,926); and
- bonding the surface of the respective optical articles to each other without an adhesive and at a temperature below the softening temperature of the optical article (200°C is below the softening temperature of the optical waveguides, see claims 2, 12 and 17 of 10/255,926).

One of ordinary skill in the art would have found it obvious to bond any two optical articles selected from a waveguide, a microlens array, an optical fiber array, a photonic component, a lens, a ferrule and an optical fiber waveguide in view of claim 15 of 10/255,926 with the bonding methods disclosed in the claims of 10/255,926, including first and second optical waveguide fibers and/or first and second ferrules.

Regarding claims 17, 18, 43 and 44; the solution having a pH greater than 8 includes ammonium hydroxide (see claims 10 and 16 of 10/255,926).

Regarding claims 19, 29 and 45; the method includes the step of eliminating (removing) adsorbed water molecules at the interface between the bonding surface of the optical articles (see claim 14 of 10/255,926).

Regarding claim 31; the method includes the step of applying pressure to the bonding surfaces during the step of placing the surfaces in contact (see claim 13 and 18 of 10/255,926).

Regarding claim 32; the pressure is applied with a vacuum (see claim 14 of 10/255,926).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 33, 43 and 44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-10, 14-18 and 22-28 of copending Application No. 10/035,659. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 3-10, 14-18 and 22-28 of copending Application No. 10/035,659 disclose or suggest all of the limitations of claims 33, 43 and 44 of the present application.

Regarding claim 33; the claims of U.S. Application No. 10/035,659 disclose a method of manufacturing an optical component comprising:

- providing at least two optical articles (glass articles/fiber preforms) each inherently having a bonding surface (see claims 1, 14 and 22 of 10/035,659);
- contacting the bonding surfaces of the optical articles with an acid (see claims 5, 16 and 25 of 10/035,659);

- contacting the bonding surfaces of the optical articles with a solution having a pH greater than 8 (see claims 7, 17 and 27 of 10/035,659), whereby termination groups selected from the group consisting of –OH, ≡Si-OH, =Si-$(OH)_2$, -$Si(OH)_3$ and –O-Si-$(OH)_3$, and combinations thereof, are formed on the surfaces (see claims 6 and 26 of 10/035,659); and
- bonding the surface of the respective optical articles to each other without an adhesive and at a temperature below the softening temperature of the optical article (see claims 1, 14 and 22 of 10/035,659).

Regarding claims 43 and 44; the solution having a pH greater than 8 includes ammonium hydroxide (see claims 8, 9, 18 and 28 of 10/035,659).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 33, 34, 43 and 44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 17-23 and 25-34 of copending Application No. 10/255,730. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 17-23 and 25-34 of copending Application No. 10/255,730 disclose or suggest all of the limitations of claims 33, 34, 43 and 44 of the present application.

Regarding claims 33 and 34; the claims of U.S. Application No. 10/255,730 disclose a method of manufacturing an optical component comprising:

- providing at least two optical articles (a Faraday rotator and a beam splitting element) each inherently having a bonding surface (see claims 17, 19 and 32-34 of 10/255,730);
- contacting the bonding surface of at least one of the optical articles with an acid (see claim 30 of 10/255,730);
- contacting the bonding surfaces of at least one of the optical articles with a solution having a pH greater than 8 (see claim 20 of 10/255,730), whereby termination groups selected from the group consisting of –OH, ≡Si-OH, =Si-$(OH)_2$, -$Si(OH)_3$ and –O-Si-$(OH)_3$, and combinations thereof, are formed on at least one of the surfaces (see claim 21 of 10/255,730); and
- bonding the surface of the respective optical articles to each other without an adhesive and at a temperature below the softening temperature of the optical article (200°C is below the softening temperature, see claims 17 and 32-34 of 10/255,730).

The claims of 10/255,730 do not specifically state that both bonding surfaces are contacted with acid, contacted with the solution having a pH greater than 8, and/or have termination groups formed thereon. However, the claims do state that "at least one" of the bonding surfaces of the optical articles are contacted with acid, contacted with the solution having a pH greater than 8, and have termination groups formed thereon. The

term "at least one" suggests that more than one (i.e. both) bonding surfaces may be contacted with acid, contacted with the solution having a pH greater than 8, and/or have termination groups formed thereon. Thus, one of ordinary skill in the art would have found it obvious to have both bonding surfaces corresponding to the respective optical articles in the invention defined in the claims of 10/255,730 be contacted with acid, contacted with the solution having a pH greater than 8 and/or have termination groups formed thereon.

Regarding claims 43 and 44; the solution having a pH greater than 8 is ammonium hydroxide (see claims 22 and 23 of 10/255,730).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

Applicant's arguments, see pages 7-9, filed December 19, 2003, with respect to prior art rejections under 35 U.S.C. § 102 and 35 U.S.C. § 103 have been fully considered and are persuasive. The prior art rejections under 35 U.S.C. § 102 and 35 U.S.C. § 103 of the claims have been withdrawn.

Applicant's arguments, see pages 6-7, filed December 19, 2003, with respect to Double patenting rejections have been fully considered but they are not persuasive. Applicant states that it was premature to address the double patenting rejection, since the claims are not in finalized form in either application, and, therefore, Applicant has chosen not to do so in the response filed December 19, 2003. Applicant additionally invites the Examiner to issue one of the two applications first, before the Double

patenting rejection is addressed, and further states that the rejection will then be addressed by Applicants in the remaining application.

The claims of the present application are allowable over the prior art of record and, therefore, are now in finalized form with respect to prior art rejections. The claims, however, remain *rejected* under Nonstatutory Provisional Double Patenting. Regretfully, the Examiner cannot issue the application while the claims are rejected. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Allowable Subject Matter

Claims 1-4, 10-12, 17-20, 33, 34 and 43-46 are currently rejected under Double Patenting as claiming the same invention as that of one or more copending applications. Claims 1-4, 10-12, 17-20, 33, 34 and 43-46, however, would be allowable if the Double Patenting rejections set forth above were overcome.

Claims 21, 22 and 29-32 are currently rejected under Double Patenting as claiming the same invention as that of one or more copending applications and under 35 U.S.C. 112, second paragraph. Claims 21, 22 and 29-32, however, would be allowable if the Double Patenting rejections set forth above were overcome and if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Conclusion

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.

Michelle R. Connelly-Cushwa
Michelle R. Connelly-Cushwa
Patent Examiner
February 11, 2004